TWO NEW FOSSIL PLANTS FROM THE TRIASSIC OF PENNSYLVANIA.

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I. A NEW CONIFER FROM CARVERSVILLE.

The occurrence of fossil plants at Carversville, Bucks County, Pennsylvania, was first made known by Prof. Amos P. Brown in 1911.[1] In addition to the two cycads and four conifers described by Professor Brown,[2] fragmentary remains of several other species of both classes are present at the locality, and one conifer, collected by the writer in 1912, is sufficiently well preserved to justify description. It bears some resemblance to a plant which has been found in the Triassic of other parts of this country, and assigned to *Palissya sphenolepis* (Friedrich Braun) Brongniart,[3] but its leaves are too long, slender, widely spaced, and with too obscure a midrib for it to be identified with that or any other previously known form. It appears to belong, however, to the same genus,[4] and is accordingly described as:

PALISSYA LONGIFOLIA, new species.

Plate 29.

Description.—Stem 6–8 mm. in diameter, striate, with subopposite leafy branches 2–2.5 mm. in diameter at intervals of 5–6 cm., and with scattered leaves between the branches. Leaves of main stem and branches alike, 2–3 cm. long, 1.5–2.5 mm. wide, separated by interspaces of about their own width, inclined at 45–60°, subopposite; linear in outline, gradually and slightly contracted at the base and somewhat decurrent; toward terminations narrowed slightly, but

[1] Proc. Acad. Nat. Sci., Phila., 1911, p. 17, pls. 1–5.

[2] *Podozamites formosus* Brown, *Zamites velderi* Brown, *Cheirolepis muensteri* (Schenk) Schimper, *C. latus* Brown, *Palissya diffusa* (Emmons) Fontaine, and *P. obtusa* Brown.

[3] In York County, Pa., Ward, Status of the Mesozoic floras of the U. S., 20th Ann. Rept. U. S. Geol. Survey, pt. 2, 1900, p. 249, pl. 32; and in North Carolina, Fontaine, idem., p. 305, pls. 44–45.

[4] Differing from *Voltzia* in having the leaves all alike, and from *Albertia* in the leaves being much longer than broad and in the presence of a distinct (though faint) midrib.

tips obtuse; nerves 4–7, parallel; midrib rather indistinct, yet undoubtedly present in some leaflets.

Type.—Cat. No. 34992, U.S.N.M.

Locality.—Quarry one-fourth mile northeast of Carversville, Bucks County, Pennsylvania; fragments fairly common in the dark gray micaceous-sandy shales at this locality, but mostly poorly preserved.

Horizon.—Lockatong formation;[1] probably within a few feet of the base.

The lack of similarity between most of the plants of this locality and those of York County, Pennsylvania (about 100 miles to the southwest), as well as those of Virginia and North Carolina, is a noteworthy fact. In the absence of exact means of correlation between the beds of the several regions, it is not possible to decide whether this is due to geographic or to stratigraphic separation; but there is nothing about any of the forms occurring here to cast doubt on the correctness of the usual assignment of the Lockatong formation to the Middle Triassic.

2. A PLANT OF UNKNOWN AFFINITY FROM NORTHERN BUCKS COUNTY.

About a mile south of the town of Sellersville a lens of green to black shale some 50 feet in thickness occurs in the midst of the usual soft red sediments (Brunswick shale) of the region. Where cut by the Philadelphia & Reading Railway line this shale contains the remains of a plant which is so definite that it seems worth description, even though its systematic position is indeterminate. Scattered fragments of what is apparently the same form occur in similar beds along this railroad in Lehigh County, three-fourths mile northeast of Coopersburg station. Fragments of what may be the same plant occur in the Cumberland area, North Carolina,[2] and elongated leaves resembling those of the present plant in York County, Pennsylvania.[3] As pointed out by Ward, a generic name which carries with it no systematic implications is desirable for such material, and as it is very unusual to find determinable fossil plants in the Brunswick beds, the name *Brunswickia* seems the most appropriate.

[1] Professor Brown, at the time of the publication of his paper, had not visited the locality, but as the map of the Second Pennsylvania Geological Survey shows the rock, at the point where the quarry was reported to be, as "Norristown shale" (now termed Stockton formation), Professor Brown gave this as the horizon of the occurrence. The matrix of the fossils is, however, like what has been described as the "Gwynedd" (Lockatong formation), and on visiting the quarry in 1912, the present writer found it to lie within that formation, although not far above its base. This correction is here emphasized because of the desirability of locating as exactly as possible the horizons at which fossils occur in the comparatively unfossiliferous Triassic beds.

[2] Fontaine, Mon. 6, U. S. Geol. Survey, 1883, p. 90, pl. 48, fig. 4.

[3] *York iagraminoides*, Wanner and Ward, 20th Ann. Rept., U. S. Geol. Survey, 1900, pt. 2, p. 254, pl. 34.

BRUNSWICKIA, new genus.

Type of the genus.—The following new species:

BRUNSWICKIA DUBIA, new species.

Plate 30.

Description.—Groups of elongate, striate leaves, diverging in a plane, with the following detailed characters: Length, 6 cm. or more; width, 1.5–2 mm.; rather thick and rigid; outline linear; nerves 5–8, equidistant, parallel, somewhat unequal, though without definite midrib; at base sheathing the stems, which are apparently branched, and diverging so that they are ultimately separated by interspaces of about their own width; in one specimen curving upward in a conical mass 1 cm. high, from a structureless base.

Type.—Cat. No. 34993, U.S.N.M.

Localities.—Cut of Philadelphia & Reading Railway three-fourths mile south of Sellersville station, Bucks County, Pennsylvania; also along the same road three-fourths mile northeast of Coopersburg station, Lehigh County, Pennsylvania. At the first fairly abundant, and forming prominent yellow streaks in the black shale.

Horizon.—Brunswick formation; the first locality lies approximately 2,800 feet above the base of the formation, the second 7,000 feet higher. This plant has of course no value in determining whether the Brunswick is of uppermost Triassic or lowermost Jurassic age—a question which can only be decided by discovery of more definitely determinable fossils therein.